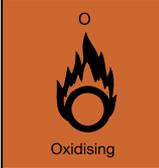


Silikal products which are based on methacrylic (MMA) resins and the associated hardening powders based on dibenzyl peroxide powder 50% are subject to the German Hazardous Substances Order (GefStoffV) as at 15 November 1999, § 6 of which requires that they be identified as follows:

 F Highly flammable	 Xi Irritant	<b>Risk phrases:</b> Highly flammable. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
Contains:		
<b>METHYLMETHACRYLATE</b>		
<b>Safety phrases:</b> Keep container tightly closed in a cool, well-ventilated place. Keep away from sources of ignition. No smoking. Do not empty into drains. Take precautionary measures against static ischarges. Wear suitable gloves and eye/face protection.		
Silikal GmbH & Co. KG Ostring 23, 63533 Mainhausen Tel. +49 (0) 61 82 - 9 23 50		

 O Oxidising	 Xi Irritant	<b>Risk phrases:</b> Can cause fires. Irritates the eyes. Sensitization through skin contact possible.
Contains:		
<b>DIBENZYL PEROXIDE 50 %</b>		
<b>Safety phrases:</b> Keep container tightly closed and store in a cool, well-ventilated place. Keep away from reducing compounds (e.g. accelerators). Change contaminated or saturated clothing immediately. Wear suitable protective gloves and safety goggles/face mask when working.		
Silikal GmbH & Co. KG Ostring 23, 63533 Mainhausen Tel. +49 (0) 61 82 - 9 23 50		

It is absolutely essential that persons handling these products also observe our safety advice “**Information on safety and protection**” and the “**Safety data sheets**” for the Silikal products which are to be used.

The information on fire and explosion protection and on toxicity is particularly important.

## A. Risk of fire and explosion

The above information states that there is an acute risk of fire and explosion under the following conditions:

1. There must be a source of ignition of at least +430 °C.
2. The MMA concentration must be 2.1 to 12.5 % v/v. Below 2.1 % v/v (21,000 ppm) the MMA concentration is not sufficient for an explosion. Above 12.5 % v/v, on the other hand, the MMA concentration is too high; it would first have to be thinned with air so that an explosive gas/air mixture could form.

## B. Toxicity of methymethacrylate

The chemical industry as a whole carried out comprehensive tests on the toxicity of methymethacrylate between 1975 and 1980. The following extract gives a brief summary of the results:

**Exposure to methymethacrylate was analyzed for the following causes in laboratory tests:**

1. Carcinogens
2. Birth defects
3. Mutagenic changes
4. Other impairments of health

The results of the individual analyses are summarised briefly below:

## 1. Possibility of cancer

These studies included a series of short and long-term experiments on rats and hamsters. MMA did not show any carcinogenic effect on the laboratory animals.

## 2. Possibility of birth defects

Experiments on pregnant rats and mice exposed to a high concentration of methylmethacrylate in the air did not reveal any influence whatsoever on the unborn creatures.

## 3. Possibility of mutagenic changes

A large number of mutagen tests were carried out. While a few indicated that MMA exercises a slight influence, the majority of the tests showed that MMA does not have any mutagenic effect. Additional experiments are planned in order to analyse the indicators in the tests in question.

## 4. Possibility of other damage to health

A large number of further tests on animals, observations by authorities on a limited number of workers in 5 factories which produce MMA acrylic sheets and additional experiments did not show any hazardous effects on health whatsoever through the handling of MMA.

Finally, it should be noted that methacrylate reactive resins have for decades been used as adhesives in bone surgery, e. g. for skull damage and hip joint implants, and in the dental industry to manufacture artificial teeth and dental prostheses, for casted or extruded acrylic sheets or solid surface panels, as well as for crack injections, paints and layers and MMA polymer concrete sanitary ware.

**The hardening powder = dibenzyl peroxide** should be kept away from sources of heat above +60 °C and from reducing substances such as heavy metals, accelerators, strong acids and lyes so as to avoid decomposition. In contrast to liquid peroxides, dibenzyl peroxide is not irritating to the skin and is only irritating to the eye given lengthy contact. In all cases you must observe the safety data sheets for the products and the safety advice we offer in the leaflet entitled “**Information on safety and protection**”.

## The following applies for methylmethacrylate-based products:

Ignition temperature:	+430 °C
Lower explosive limit:	2.1 % v/v
Upper explosive limit:	12.5 % v/v
LD <sub>50</sub> (oral, rat)	8400 mg/kg